State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

March 16, 1998

Paul Spor
Tintic Utah Metals LLC
P.O. Box 51
Eureka, Utah 84628

Re: Initial Review of Permit Transfer Application & Large Mine Permit Revision, Tintic Utah Metals, LLC, Burgin Mine Project, M/049/009, Utah County, Utah

Dear Mr. Spor:

The Division has completed a review of your Permit Transfer application and Large Mine Permit Revision application for the Burgin mine, located in Utah County, Utah, which was received June 16, 1997. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

The Division is aware of Tintic Utah Metals's desire to have this permitting action completed and their reclamation surety in place in time to avoid the payment of a premium on the surety currently in place by Sunshine Mining Company. We will assist you in this manner to the extent possible. Recent Board actions regarding LLCs have required the operator to provide a copy of the corporate resolution and a listing of the LLC members. This information will be needed before the amount and form of reclamation surety can be presented to the Board of Oil, Gas and Mining, which will follow our eventual tentative approval decision on this application.

The Division will suspend further review of the Burgin mine transfer application until your response to this letter is received. If you have any questions in this regard please contact me, Tony Gallegos, Lynn Kunzler, or Tom Munson of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Attachment: Review
cc: Tom Gast,
Dennis Frederick, DWQ

REVIEW OF NOTICE OF INTENTION TO REVISE LARGE MINING OPERATIONS

Tintic Utah Metals LLC
Burgin Mine Project

M/049/009

R647-4-105 - Maps, Drawings & Photographs

105.1 Topographic base map, boundaries, pre-act disturbance

A map for each area is needed that shows the boundary of the original permit, the area that was disturbed (current disturbance), and the area that will be used for the new permit (both current disturbance and proposed new disturbance). (LK)

105.2 Surface facilities map

Please label all features/structures shown within the mining areas on each of the surface facilities maps. Please add section markers or section corners to the individual surface facilities maps for reference. Please label related features/structures which are located outside of the proposed disturbed area boundaries (Figure 4-1 includes some examples). If this makes the map too cluttered, please include an index number or letter on each structure and provide an index key describing these structures. Please indicate roads or areas which are paved by using cross hatching or other graphic variations. Please identify county roads accessing the sites. Please provide a map showing the proposed pipeline corridor from the mine sites to the proposed tailings facility. Please provide a map similar to Figure 1.2 which shows the various permit areas and their proximity to one another. You may exclude the Zuma area from this permit proximity map in order to provide more detail of the other areas (Apex, Burgin No.3, Burgin No. 2, Burgin No. 1 and tailings disposal area) and adjust the scale as needed. Please provide a surface facilities map of the injection well site for the Mine Dewatering/Disposal System. Include and identify dewatering structures located at each of the areas on the appropriate surface facilities maps. (AAG)

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)

All sediment ponds, diversion channels, culvert size and locations, and other hydrologic designs and features to be incorporated into the mining and reclamation plan need to be clearly shown so that the Division can make an adequate assessment of these structures as to their function and impact on the natural environment. These structures, although referenced in the plan, are not clearly called out on drawings or in the text in the context of impact they will have on natural drainages. Watershed areas are not shown and adequate assessments of the capacities of ponds or culverts or diversion ditches cannot be checked. Information provided on maps showing these structures is essential to understanding and reviewing the surface water hydrology. The information discussed above will need to be provided in terms of the operational phase, the reclamation phase, and the postmining phase. (TM)

Representative cross-sections of ditches, sediment and tailing disposal ponds, dam/pond embankments, and spillways will be required. These representative cross-sections are needed for both the active and post mining phases of the operation. (TM)

Please provide a design drawing for a typical "cattle guard" shaft closure and the other proposed grate closure. Please indicate all weld connections, keyed-in structures and typical dimensions. Please provide a topographic map of the proposed tailings pipeline corridor. (AAG)

Please provide a reclamation treatments map for each of the mining areas. This map should be identical in scale to the individual surface facilities maps. Use cross hatching or color coding to indicate which areas will receive specific reclamation treatments or the lack of reclamation treatments. Identify these treatments in a map legend or on a separate listing(i.e., what areas will receive agricultural grade and/or coarse lime, what areas will be drill seeded vs. broadcast seeded, what areas will be fertilized (or different rates applied), what areas specific variances are requested for, etc.). Disturbed areas or facilities on this map coded as not receiving reclamation treatments should be described in the variance request section of the text. The areas and reclamation treatments shown on this map should agree with the textual descriptions of the reclamation plan and the specific reclamation cost calculations. Please provide cross sections of the post reclamation waste dump slopes. (AAG) (LK)

The operator has also not provided a reclamation treatments map(s) which clearly calls out soil stabilization treatments related to erosion control and revegetation. Please provide this information. (TM)

R647-4-106 - Operation Plan

106.3 Estimated acreages disturbed, reclaimed, annually.

Acreage conflicts (amount of acreage disturbed) exist for the Apex #2 shaft area (pg 4.4 = 2.8ac vs. Fig. 7-1 = 3.45 ac.), the Burgin #2 area (pg 6-2 = 20.76ac. vs. Pg 6-4 = 14.4ac.), Burgin #3 area (pg 7-1 = 4.0ac. vs. pg 7-4 = 5.0ac.), the mine dewatering system (pg 8-1 = 6.96ac. vs. pg 8-12 = 6.0ac.), the tailings pond (new)(pg 9-2 = 37.0ac., pg 9-5 = 37.4ac., pg 9-13=25.0ac.) and the Zuma area (pg 10-1 = 5.0ac,. pg 10.2 and 10.4 = 7ac., pg 10-11 = 3.3 ac.). While some of this conflict may be due to rounding error, there is significant differences for most areas, (20% difference on the Burgin #3 area). Please provide correct acreage for what is currently disturbed and what is proposed as new disturbance. (LK)

Figure 5-1 shows the permit boundary for Burgin No. 1 as 29.05 acres with a disturbed area of 15.90 acres. Page 5-3 of the text states the project is currently permitted for 24 acres with approximately 15 acres currently disturbed. Figure 6-1 shows the permit boundary for Burgin No. 2 as 43.20 acres with a disturbance area of 20.78 acres. Page 6-4 states the current permit area is 34 acres with an existing disturbance of 14.4 acres. Please explain these acreage discrepancies for the various mine areas. Please explain proposed increases or decreases in current permit boundaries for all sites. Please provide a summary table of acreages for the various mine areas. In this table include columns for current permit

boundary area, current disturbed area, proposed permit boundary area, proposed disturbed area, proposed reclaimed area, proposed unreclaimed area. (AAG)

106.4 Nature of materials mined, waste and estimated tonnages

Tab 13 of the plan volume is for the appendix containing soil and waste rock sample analysis. Please provide a written section in the text describing the waste rock sampling program and analysis presented in this appendix. Please describe the type of samples collected, sample locations, sampling depths, sample collection method, sample handling, chain of custody protocol, and whether samples were analyzed as composite or individual samples. Please provide a map showing the sampling locations.

The reclamation text sections for the Apex No. 2, Burgin No. 1, and Burgin No. 3 reference the use of limestone on the waste rock dumps at the time of final reclamation if testing supports this need. The reclamation estimate sections for the Apex No. 2, Burgin No. 1 actually include line item costs for application and/or incorporation of limestone on the associated dump areas. The reclamation text for the tailings impoundment mentions the possibility of the need for limestone application to alleviate the potential for acid generation. As a worst case scenario, the application and incorporation of limestone on all the dumps and tailings should be included in the reclamation description and reclamation estimates at this time, unless available sampling and analyses justify the omission of this treatment. The amount of limestone to be applied should be based on the results of acid base accounting tests. (AAG)

106.5 Existing soil types, location, amount

Please provide a soils map showing the boundaries of each soil type. Also, please indicate the locations of the where the soil samples were taken. Soil samples were also taken in 1997 (for the new tailing pond area and the Zuma expansion area). This data needs to be submitted as well. (LK)

106.6 Plan for protecting & redepositing soils

Some of the soils data indicate the need for special handling and/or amendments to correct potential problems. While plans for sampling soils for amendments is included, the application needs to discuss special handling of problem materials (soils with low pH - <5.0 or high acid potential.

The proposed seed mix for topsoil pile stabilization should be changed. Generally, crested wheatgrass and russian wildrye will not occupy the same site (either one or the other will establish and dominate). While yellow sweetclover is good, it is only persistent for a couple of years. It should not be the only legume species for long-term topsoil stabilization. The proposed seeding rates for all species is extremely high. Attached is a recommended seed mix for long-term topsoil stabilization. If acceptable, please incorporate it into the plan.

With reference to the plans for the Burgin #3 area, 1 foot of soil is proposed to be salvaged along the new access road and stockpiled by windrowing it along side the road for reclamation of the road. Later, a request is made to leave the road for permanent access, thus alleviating the need for the topsoil to reclaim the road. If the Division grants the requested variance to leave the road permanently, where will the salvaged soil be utilized? If the variance is granted, the soil should be put in a stockpile where it can be more easily accessed for reclamation. You will need to show the location of the stockpile on the surface facilities map. The plan states that 3 feet of soil will be salvaged from the Burgin #3 area. Yet, only 1.5 feet is proposed for reclamation. Where will the remaining 1.5 feet (one half of the stockpiled soil) of topsoil be utilized? It is possible that this could be used to fully reclaim the Apex #2 area located approximately 1000 feet from the Burgin #3 area. (LK)

106.7 Existing vegetation - species and amount

Most sections refer to the vegetation types that probably existed pre-mining as pinyon-juniper or a grass/forb/shrub community. However, the percent of vegetation ground cover (the basis for the reclamation standard) is not reported (the application indicated that the cover for the apex #2 area was about 15%. Nowhere else was the % vegetation cover discussed). Please provide vegetation cover estimates for these two community types and a discussion as to the dominant species in each community and the methodology used to determine percent ground cover.

A vegetation survey is needed for the proposed new Burgin #3 area.
A vegetation survey is needed for the proposed new mine dewatering system area.
A vegetation survey is needed for the proposed new tailings pond area.
A vegetation survey for the Zuma expansion area is needed. (LK)

106.8 Depth to groundwater, extent of overburden, geology

Please provide to the Division any information submitted to the Division of Water Quality in regards to the location, disposal and potential treatment of groundwater resources within the mine area. (TM)

106.9 Location & size of ore, waste, tailings, ponds

The plan needs to provide a good location map of all the ponds and tailings impoundments in relation to disturbed and undisturbed drainages. The Division received a submittal on February 13th discussing the ponds, but the maps are of insufficient quality to allow an adequate technical evaluation. We request that new maps be generated. The location of the ponds in relation to the existing drainage and the design and maintenance of the pond system all need to be shown. The pond design and maintenance requirements must be discussed in the text. TM)

R647-4-107 - Operation Practices

107.1 Public safety & welfare

107.1.11 Closing or guarding shafts & tunnels

Please provide more information describing the safety measures to be taken during operations to prevent public access to all shafts. Include descriptions and locations of main access gates, fencing and warning signs. Indicate secured gate locations on the appropriate maps. (AAG)

107.1.13 Plugging or capping drill holes

It is the Division's understanding that any new drilling will occur underground and the same plugging principles need to apply to plugging drill holes that have artesian water and encounter groundwater drilled underground that apply to surface drill holes in terms of protecting aquifers etc. Please discuss this comment in terms of what can or cannot be achieved in regard to hole plugging of underground drilling. (TM)

107.2 Drainages to minimize damage

Specifically call out where natural channels have been affected(i.e. rerouted) on a surface facilities plate. What measures will be taken to prevent environmental damage(i.e riprap, sediment controls, etc.) and the location of the treatment. In reviewing the plan, sites like the Zuma have channels that will be reclaimed but no specifics as to amount of channel watershed area affected or actual reclaimed channel cross sections, etc. are given. I agree that the reclaimed channels should be based on the dimensions of the applicable cross sections immediately upstream and downstream of the impacted area and not necessarily on the 25 year, 6 hour event. Although this design information is necessary and appropriate to size riprap, culverts and any permanent structures, pond spillways, etc. and assess potential impacts.

The plan also lacks the necessary design information regarding the mine water retention ponds. If they are proposed to be left, who will take responsibility for maintaining these structures and how will they continue to function. Please provide the hydrologic calculations for the 100yr - 24hr storm to verify capacity and functions of the ponds. Also include sediment clean out criteria and maintenance provisions for operational and post mining phases of the project. (TM)

107.3 Erosion control & sediment control

The operator has stated that erosion and sediment would be controlled both during operations and during reclamation. Please make reference to the proposed soil stabilizing methods on the reclamation treatments plate. Leaving surfaces in a roughened condition is appropriate and certainly a good reclamation and erosion treatment. (TM)

R647-4-108 - Hole Plugging Requirements

It was stated in the plan that almost all drilling would occur underground and that some shafts would be reclaimed with cattle guards, etc. Please show the location of these structures and reference them by name on the reclamation treatments plate. Please reference any current drill holes or shafts that will be permanently sealed. (TM)

R647-4-109 - Impact Assessment

109.1 Impacts to surface & groundwater systems

The operator has failed to provide an adequate assessment of the impacts associated with the surface tailings impoundments and sediment pond structures which will be left after mining. This includes impacts to the surface and ground water systems both during and following mining operations. (TM)

R647-4-110 - Reclamation Plan WAYNE REWORDED PORTIONS OF THIS SECTION

110.1 Current & post mining land use

The revision application proposes to leave several roads, buildings pad areas and shafts unreclaimed upon mine closure. A post mining land use of future mining and exploration activities is proposed as justification for the Division to approve a variance for these facilities to remain. Leaving these facilities presents an apparent conflict with the other post mining land use(s) of open space and wildlife habitat. A primary objective of the Mined Land Reclamation Act (the Act) is to insure that all mining-related disturbances are properly reclaimed *after* mining operations are terminated. Granting a variance to leave mining facilities/structures for possible future exploration and/or mining related activity may not be acceptable to the Division without additional supportive justification.

Before the Division can consider approving this post mining land use and variance request, the following types of supplemental information will need to be provided:

(a) reasonable assurance that future mining/exploration use of the facilities will actually occur,
(b) an explanation of how (and by whom) the facilities will be maintained and secured to insure public safety during the inactive/suspended period, and
(c) an explanation of who will assume the ultimate reclamation responsibility of these features.

At this point in time, reclamation of these facilities needs to be planned and included in the reclamation surety estimate. At the end of the mining project, the facilities would either be reclaimed, or if potential mining and exploration activities will continue by another party, the reclamation responsibility and bonding obligation would need to be transferred to the other party. (LK/DWH)

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Page 7-5, paragraph one of the submission states the haul road to the Burgin No. 3 project area will permanently remain in place for future access to the area. Paragraph four of the same page states that along the haul road, the soil stored in berms along the road outslope will be pulled over the road disturbance following grading and ripping. Please explain these conflicting statements. Please provide a description of the road proposed to remain (length, width, drainage control, paved or gravel, etc.). Please mark and label this road section on the appropriate map(s). This road information should be included in the variance request section. (AAG)

Proposed reclamation for the Apex No. 2 disturbance of approximately 3.45 acres includes the application of 0.5 ft of limestone material applied to the level waste dump surfaces and outslope except the 0.75 acre dump top area which will be ripped, topsoiled, seeded and mulched. The road spur will be graded, ripped, seeded and mulched. Please explain why the additional waste rock to be placed on the dumps could not be used to reduce the slope angles to less than the angle of repose. (AAG)

Proposed reclamation for the Apex No. 2 dump top includes ripping approximately 0.75 acres in preparation for the application of limited topsoil salvaged prior to dump expansion. Figure 4-1 indicates the level area at the Apex site is approximately 1.96 acres. Please explain why this entire level area cannot be ripped and reseeded. (AAG)

Proposed reclamation for the waste rock dump slopes at the Burgin No. 2 site call for slopes affected by rills and gullies to receive surface dressing and covering with coarse waste rock. Please explain why these slopes should not also receive revegetation treatments. (AAG)

Proposed reclamation for the Burgin No. 2 area includes final grading of 10.5 acres of the pad area. A number of the structures located at the site are proposed to remain, although the post-reclamation configuration of structures at this site is unclear at this time. The Division recommends that final reclamation of disturbed areas which are level and or compacted include deep ripping prior to revegetation treatments. (AAG)

Due to the design of the tailings disposal facility being conceptual, the Division may have new or different comments regarding the reclamation of the final design approved by the Division of Water Quality and Dam Safety. (AAG)

110.3 Description of facilities to be left (post mining use)

All structures or facilities proposed to remain require a variance granted by the Division in writing. Variances which the Division has previously granted in an existing permit are usually extended when the permit is transferred. New variances require the submission of the appropriate information as described in section R647-4-112. (AAG)

In section 5.5 of the submission, the warehouse and fenced storage area at the Burgin No. 1 site are proposed to remain unreclaimed after mining operations cease. Please clarify whether allowing these facilities to remain is a continuation of a previously granted variance request or a new variance request. Please provide documentation to support either of these situations. (AAG)

Page 6-4 of the submission states that all buildings, tanks, structures and other equipment remaining at the conclusion of mining operations will be dismantled and removed from the Burgin No. 2 permit area. Page 6-7 of the submission requests a variance to allow these facilities (administrative and engineering offices, assay laboratories and shops) to remain. Please clarify these conflicting statements and indicate which structures are proposed to remain on a map (reclamation treatments map or post reclamation map) and by providing an itemized list of these structures. The request for allowing these facilities to remain would infer that access roads within the site would also need to remain. Please identify and describe any roads or parking areas which are also proposed to remain in the Burgin No. 2 permit area. Please provide a drawing of the post-reclamation configuration of the Burgin No. 2 area. Please clarify whether allowing these facilities to remain is a continuation of a previously granted variance request or a new variance request. Please provide documentation to support either of these situations. (AAG)

The mine dewatering system will include two 30-inch diameter pipelines approximately 5,000 feet in length, plus one 16-inch diameter pipeline approximately 2,000 feet in length. Portions of the pipeline are proposed to be placed in a trench or covered with rock mulch. The disturbance created within this corridor during dewatering pipeline installation is to be concurrently reclaimed, however, the pipeline is proposed to remain with plates welded on the ends to prevent access. Please provide additional drawings describing the proposed pipeline including a typical pipeline corridor cross section over gentle terrain, steep terrain, and a stream crossing. Please provide a variance request for allowing the dewatering pipelines to remain according to section R647-4-112 of the Minerals Rules. (AAG)

The tailings pipeline will be approximately six inches in diameter, however no proposed length dimension was provided in the submission. The pipeline is proposed to remain in place with plates welded on the ends, however, exposed pipes and pumping equipment will be removed. Please provide a description of the length of the tailings pipeline. Please describe which exposed pipes and equipment will be removed and their locations by indicating these features on the appropriate map(s) and in the text. Please provide drawings of the typical tailings pipeline corridor cross section over gentle terrain, steep terrain, and a stream crossing. Please provide a variance request for allowing the tailings pipeline to remain unreclaimed according to section R647-4-112 of the Minerals Rules. (AAG)

110.4 Description or treatment/disposition of deleterious or acid forming material

Please see comments under R647-4-106.4 which pertain to sampling and analysis of waste rock materials with respect to acid base accounting. (AAG)

110.5 Revegetation planting program

Several species on the proposed revegetation seed list are not likely to succeed in that they are poorly adapted to the site conditions. Attached is a recommended seed mix that is more closely adapted to site conditions. If acceptable, please incorporate this mix into your plan. A variance for not seeding several areas has been requested, based on test plots that were apparently developed on the site in the early 1980's by a previous operator. After reviewing the test plot reports provided to the Division on October 2, 1983 and November 4, 1985, it appears that revegetation is feasible (although meeting the 70% success standard may not be practical for areas not receiving topsoil). Therefore, the requested variance is not warranted and plans need to include revegetation of all areas. (LK)

R647-4-111 - Reclamation Practices

111.1 Public safety & welfare

1.11 Sealing shafts & tunnels

Please see the comment under section R647-4-105.3 regarding a design drawing for the proposed cattle-guard shaft closure. Please provide a more detailed description of the safety measures proposed for the Burgin No. 3 Shaft at the end of operations. (AAG)

111.2 Reclamation of natural channels

Please show on a plate what reaches of channel will be reclaimed and what measures will be taken to stabilize these reaches. (TM)

111.5 Land capable of post mining land use

See comments under R647-4-110.2

111.6 All slopes regraded to stable configuration

Page 6-5 of the submission states the Burgin No. 2 Waste Dump slopes exhibit rill and gully erosion. Since the placement of additional waste rock material is not proposed for this site the Division recommends reclaiming and stabilizing these slopes as part of concurrent reclamation rather than waiting until the end of operations. (AAG)

There is some confusion regarding reclamation treatments for existing waste rock dump slopes which are at the angle of repose. It is unclear whether these dump slopes were allowed to remain at the angle of repose through a variance, or if the Division deferred a decision on this matter pending the results of a test plot program. Every effort should be made to decrease the slope angles of those existing waste rock dumps which will receive additional waste rock material. (AAG)

Section 7.5 of the submission states the waste dump outslopes at the Burgin No. 3 site will be graded to 2H:1V with coarse rock overlying the surface. Please explain why these proposed dump slopes cannot be graded out to 3H:1V and receive topsoil and revegetation treatments. (AAG)

111.9 Dams & impoundments left self draining & stable

Please describe how this will occur for all impoundments that are to be left following mining. The current plan incorporates maintenance and treatment of erosion during mining, but does not provide a stability analysis for these structures following mining. An analysis of the materials found in these impoundments for toxic sediments is also prudent considering the source of these sediments. (TM)

111.11 Structures & equipment buried or removed

It appears as if the pipelines for the mine dewatering system will not be removed. While this may be acceptable (sufficient cover material over the pipe to reestablish vegetation or the pipe should be removed), it is unclear if soil will be replaced over the entire pipeline corridor with vegetation reestablished, or whether it is the intent to only reclaim the road portion of the corridor? This needs to be clarified. If the pipe is not removed and/or the entire corridor revegetated, please provide justification for not revegetating the entire corridor in light of the proposed postmining land use of wildlife habitat. (LK)

Proposed reclamation at the Apex No. 2 and Burgin No. 3 sites describes concrete slabs as being broken up and placed in waste dumps with one foot of waste rock cover. Proposed reclamation at the Burgin No. 1 and Burgin No. 2 sites describes broken concrete slab materials as being covered with two feet of waste rock cover. The Division typically recommends a minimum of four feet of cover over broken concrete. This is also a typical burial recommendation for broken asphalt from reclamation of paved roads. Please provide justification for the proposed one and two foot depths of cover over the broken concrete or modify the depth of cover to four feet. (AAG)

111.12 Topsoil redistribution

See comments under R647-4-106.6

R647-4-112 - Variance

Due to the disjointed nature of the existing permit, the Division has attempted to summarize the variances requested in this submission. Attachment A, provides a *Preliminary DOGM Summary* of the reclamation requirements and variance information obtained from the *existing* permit. The main permit approval documents found which describe reclamation requirements and variances from the existing permit are:

(1) the Apex No. 2 Executive Summary (May 17, 1982);
(2) the Burgin Mine Project letter and Tentative Approval Order to Show Cause (December 28, 1984);
(3) the January 16 and 28, 1985 letters from Sunshine Mining Company; and
(4) the Division's Zuma Amendment letter of June 19, 1992.

The Division cannot make a decision on the variances requested in this submission until the additional information requested in this review is received. (AAG)

*Division Summary of Variances Requested in **this Submission** by Area*

Section 4.8 of the submission describes a request for variances at the Apex No. 2 Shaft Area. The proposed variances at this area would not require: permanent sealing of the Apex No. 2 shaft; regrading angle of repose waste dump slopes to a lesser angle; topsoil redistribution on 2.25 acres (0.75 acres out of a 3.0 acre disturbance would receive topsoil); and meeting the revegetation success standard on all areas which do not receive topsoil.

Section 5.7 of the submission describes a request for variances at the Burgin No. 1 Shaft Area. The proposed variances at this area would not require: removal and reclamation of the warehouse and fenced outside storage yard; permanent sealing of the Burgin No. 1 Shaft; regrading waste dump slopes currently at angle of repose to a lesser angle; regrading and revegetating settling pond 3; topsoil redistribution on all disturbances except for settling ponds 1, 2, and 4; and meeting the revegetation success standard on all areas except settling ponds 1, 2, 3, 4.

Section 6.7 of the submission describes a request for variances at the Burgin No. 2 Shaft Area. The proposed variances at this area would not require: removal and reclamation of the administrative office, engineering office, assay laboratory and shop; permanent sealing of the Burgin No. 2 shaft; regrading angle of repose waste dump slopes to a lesser angle; topsoil redistribution on all areas to be reclaimed; and meeting the revegetation success standard on all areas to be reclaimed

Section 7.8 of the submission describes a request for variances at the Burgin No. 3 Shaft Area. The proposed variances at this area would not require: permanent sealing of the Burgin No. 3 shaft; reclamation of the access road.

Section 8.7 of the submission describes a request for variances associated with the Mine Dewatering & Disposal System. The proposed variances for this area would not require: topsoil redistribution on the injection well sites; and meeting the revegetation success standard at the injection well sites.

No variances were requested for the Tailings Disposal System in section 9.8 of the submission.

Section 10.7 of the submission describes a request for variances associated with the Zuma Area. The variances requested in this area would not require reducing highwalls to less than 45 degrees, topsoil redistribution and meeting the revegetation success standard. Reference is made to a Division letter of June 19, 1994 granting variances in this area.

R647-4-113 - Surety

The general methodology used in preparing the reclamation estimate is clear and easy to follow. The review comments contained in this letter may have an effect on the reclamation tasks to be performed at the various areas, and consequently, the Division cannot accept the proposed

reclamation surety amount until these comments are resolved. The surety comments are listed below. (AAG)

Escalation in the overall estimate should be recalculated using the current projected escalation factor of 2.24% rather than the old and higher factor of 2.52%.

The Division has generally used a mobilization cost of $2,000 per piece of large equipment rather than $2,000 per project. Using that general cost, this reclamation estimate would cover mobilization of approximately seven pieces of large equipment. What is the anticipated equipment fleet needed for reclamation of this operation? What is the distance to the nearest location of heavy equipment available for third party reclamation at this site?

The Division has compared the 16 base costs used throughout the reclamation estimate sections with costs from the Rental Rate Blue Book (Blue Book), the Means Heavy Construction Cost Data 1998 (Means) and the Division's general estimates. The comparison comments are shown in italicized print. Some of the Division comparisons may be inaccurate due to the lack of equipment description, e.g. crane lifting height and capacity requirements. Please provide documentation to support your proposed base costs as third party costs, or utilize the rounded Rental Rate Blue Book costs shown below in calculating a revised estimate.

1. General Labor $20/hr - *Means, Crew A-1, building laborer, including overhead and profit $32.50/hour*

2. Equipment operator $25/hr; supervisor $30/hr - *Means, Crew B-11B, equipment operator (medium) including overhead and profit $37.20/hour; Crew B-11N, labor foreman (outside), including overhead and profit $35.47/hour.*

3. D8 Dozer with operator $141/hr - *Blue Book, Cat D8N (1995) dozer, U blade, EROPS, $125/hour X regional adjustment 0.865 = $108.13/hour+ $24.20/hour operating costs = $132.32/hour + Means equipment operator (medium) $37.20/hour = $169.53/hour.*

4. Crane & operator $200/hr - *Unable to make Division comparison due to lack of equipment description. Please describe the equipment proposed and provide documentation supporting this unit cost.*

5. Lowboy & driver $105/hr - *Unable to make Division comparison due to lack of equipment description. Please describe the equipment proposed and provide documentation supporting this unit cost.*

6. Farm tractor w/disc, drill, etc. $30/hr - *Division general estimate of $60/hour for tractor + operator + drill.*

7. Hydromulcher w/tractor $66/hr - *Please confirm this is for equipment only and for the application of mulch only, not hydroseeding and hydromulching.*

8. Soil sampling equipment $1.00/50 acre -*Acceptable to the Division as is.*

9. Soil sample analysis $20/sample- *Acceptable to the Division as is.*

10. 8 ft high chain link fence $10/LF - *This seems low for an 8 foot fence. Means 028-308-0900 for a 6 foot fence, 6 GA wire, aluminized is $19.45/LF.*

11. Fertilizer materials only $35/acre - *Unable to make Division comparison due to lack of fertilizer description and application rate. Please describe the proposed fertilizer and rate, and provide documentation supporting this unit cost. This unit cost may be difficult to estimate since fertilizer type and rates were to be based on soil analyses. In general, the unit cost used should be based on the worst case scenario with the information currently available.*

12. Agricultural limestone $40/ton - *Please describe the source location for this material and distance from the mine site to support this unit cost. Please include the application cost of this material in the estimate or explain where this cost is included. This unit cost may be difficult to estimate since application rates were to be based on soil analyses. In general, the unit cost used should be based on the worst case scenario with the information currently available. Please provide justification for the application rate.*

13. Coarse limestone = $10/ton - *Please describe the source location for this material and distance from the mine site to support this unit cost. Please include the application cost of this material in the estimate or explain where this cost is included. This unit cost may be difficult to estimate since application rates were to be based on soil analyses. In general, the unit cost used should be based on the worst case scenario with the information currently available. Please provide justification for the application rate.*

14. Hydromulch w/tackifier $350/acre (1.0 to 1.5 ton/acre) -*Acceptable to the Division for materials only.*

15. Broadcast seeder/fertilizer $1/acre - *The Division's general estimate for equipment only is $2/acre .*

16. Seed cost (20.35 lbs/acre) $174/acre, $152.50/acre - *Acceptable to the Division for materials only, however, these costs should be adjusted to reflect the Division's recommended seed mixes.*

Please explain the disposition of building debris associated with building removal. Will this debris be buried on site or transported to a landfill? What are the landfill fees? The Division will need the additional information requested in this review letter to determine if these costs are adequate.

Please provide justification for utilizing a speed of 2 mph for a D8 dozer ripping to a depth of 1 to 3 feet in compacted waste dump material and road surfaces.

The Apex No. 2 estimate includes a cost for soil reapplication. Please explain the location of the soil and the equipment proposed for this task.

Please explain the omission of costs for placement of a grate over the shaft in the Burgin No. 2 reclamation cost estimate section.

The reclamation cost estimate for the Mine Dewatering/Disposal System did not include costs for removal of the pipeline. Costs for this task will need to be included in the estimate unless a variance is granted allowing this fixture to remain unreclaimed.

Please explain the mention of seeding pit benches in the reclamation estimate for the Tailings Disposal System. Please explain where the disturbance associated with the access road is included in this estimate section. Page 9-2 of the submission states this facility will disturb approximately 37 acres within a 58 acre permit boundary. Please explain the acreage calculation in the estimate for the tailings disposal system utilizing 25 acres of actual disturbance. Please provide justification for the assumption that the tailings materials will not be potentially acid generating or include costs for the application of limestone in the estimate.

Please explain the disturbed acreage summary used in the Zuma area reclamation estimate. Page 10-2 of the submission states the existing disturbance at the Zuma pit is about seven acres and the proposed program may result in an additional surface disturbance of five acres.

The submission does not include a reclamation cost estimate for the six settling ponds. The utilization of these ponds for storm water control for the mine operations would imply reclamation responsibility. The information requested in this review may resolve the question of reclamation responsibility.

Please provide an estimate of the cost of closing/decommissioning the injection wells and include this cost in the overall site reclamation estimate.

Please provide a summary listing of area reclamtion costs with a grand total reclamation surety amount.

Attachments: Attachment A
Seedmix

ATTACHMENT A

Summary of Reclamation Requirements and Variance Information in the Existing Permit

APEX STANDARD NO. 2 - this area was initially permitted under the name of the Burgin Mine Project. Specific documentation granting variances could not be found, however, the reclamation required after operations and a variance are documented in the Executive Summary attached to the May 17, 1982 memo to the Board of Oil, Gas and Mining. Based on this Executive Summary, the access roads and working surfaces were to be left accessible and the shaft was not to be permanently closed. All other buildings and surface facilities not relating to leaving access roads, working surfaces accessible & shaft not permanently closed were to be removed. The waste rock working surface was to be graded to a level configuration and the slopes rounded off to minimize erosion. A variance to Rule M-10 (12) was granted based on the performance of a three year test plot program using existing waste rock materials for revegetation due to the lack of topsoil for use in reclamation. Rule M-10 (12) describes the criteria for determination of revegetation success.

BURGIN NO. 1 & BURGIN NO. 2 - these areas were included in permit amendments submitted under the name of the Trixie Mine, Hunter Shaft and Burgin Mill Facilities. Specific documentation granting variances in these area could not be found. The Division issued tentative approval of this amended mine plan on December 14, 1984. A December 28, 1984 Division letter stated final approval would be granted if no adverse comments were received and the agreed upon surety had been submitted and signed by the Board. The Tentative Approval Order to Show Cause listed seven stipulations to permit approval. Stipulation two described the determination of reclamation seed mixes to be based on Apex test plot results. Stipulation seven described a consultation with the Division if favorable revegetation results are not evident at the Burgin Mill by July 1987. The reclamation cost estimate included with the Tentative Approval included a note stating the Division could not allow the Trixie Shaft to remain without a bond (Chief Consolidated requested the shaft be left intact). A Division February 25, 1985 letter stated Sunshine's letters of January 16 and 28, 1985 were sufficient to address all of the stipulations in the Division's December 28, 1984 letter, and the only thing needed to receive final approval was the posting of the required bond. The Sunshine letters stated the bond was revised to include the cost of a shaft closure for the Trixie Mine in their revised reclamation budget submitted in December 1984. The permit was amended in April 2, 1985 to include Trixie tailings ponds 1, 2, 3 and 4. Ponds 2, 3, and 4 were existing ponds previously used as settling ponds for mine water. The amended mine plan had not yet received final approval due to the lack of a bond when this tailings pond amendment was submitted. The Division acknowledged receipt of the agreed upon bond in a June 3, 1985 letter (which inferred final approval for the amended mine plan was granted). The Trixie pond amendment was approved in a Division June 12, 1985 letter with stipulations for an additional map and possible bond adjustment in the future. An amendment to create tailings ponds A, B and C was submitted in December 17, 1985, however, this amendment never received final approval from the Division. The Zuma pit was amended into the mine plan

with final approval by the Division on December 9, 1992 (see Zuma section below). The Trixie Shaft was separated from the permit and bonded separately by South Standard on April 26, 1994.

ZUMA PIT - the Division's letter dated June 19, 1992 granted variances for the Zuma area. A variance was granted to allow existing highwalls at the Zuma Pit to remain at angles steeper than 45 degrees. A variance was granted to the topsoil redistribution requirement for the existing pit area. A variance was granted to the 70% revegetation standard for reclamation within the pit, however, pit benches were to be broadcast seeded, and ripped prior to seeding if the benches are accessible by equipment. The approved amendment describes the south pit wall to remain at the same configuration with a series of benches cut into the north wall.

Recommended Revegetation Species List
for

Tintic Utah Metals, LLC
Burgin Mine
M/049/009

Common Name	Species Name	*Rate lbs/ac (PLS)
Streambank wheatgrass	Agropron riparium	2.0
Western wheatgrass	*Agropyron smithii*	2.0
Intermediate wheatgrass	*Agropyron intermedium*	1.0
'Piute' orchard grass	*Dactylis glomerata*	0.5
Basin wildrye	*Elymus cinereus*	2.0
Lewis flax	*Linum lewisii*	1.0
Ladac alfalfa	*Medicago sativa*	1.0
Yellow sweetclover	*Melilotus officinalis*	0.5
Palmer penstemon	*Penstemon palmeri*	0.5
Small burnet	*Sanguisorba minor*	1.5
Wyoming big sagebrush	*Artemisia tridentata wyomingensis*	0.2
Rubber rabbitbrush	*Chrysomthmnus nauseosus*	0.5
Forage kochia	*Kochia prostrata*	0.5
	Total	13.2 lbs/ac

*This the recommended drill seeding rate.
If the species are to be broadcast seeded, increase the rate by 50%.

For **Topsoil Stabilization**, the following species are recommended:

Common Name	Species Name	*Rate lbs/ac (PLS)
Streambank wheatgrass	Agropron riparium	3.0
Intermediate wheatgrass	*Agropyron intermedium*	2.0
'Piute' orchard grass	*Dactylis glomerata*	1.0
Ladac alfalfa	*Medicago sativa*	1.5
Yellow sweetclover	*Melilotus officinalis*	1.0
Small burnet	*Sanguisorba minor*	1.5
Forage kochia	*Kochia prostrata*	0.5
	Total	10.5 lbs/ac

*This the recommended broadcast seeding rate.

P.01

TRANSACTION REPORT

MAR-16-98 MON 05:29 PM

SEND(M)

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
MAR-16	05:16 PM	19704829619	12'52"	19	SEND	(M) OK	174	

TOTAL 12M 52S PAGES: 19

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

M/049/009

UTAH DIVISION OF OIL, GAS AND MINING
FACSIMILE COVER SHEET

DATE: March 16, 1998

FAX#: 1-970-482-9619

ATTN: Tom Gast

COMPANY: Tintic Utah Metals

DEPARTMENT:

NUMBER OF PAGES (INCLUDING THIS ONE) 19

From: Wayne Hedberg

If you do not receive all of the pages, or if they are illegible, please call (801)538-5340.

We are sending from a sharp facsimile machine. Our teleconier

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Lowell P. Braxton
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

M/049/009

UTAH DIVISION OF OIL, GAS AND MINING
FACSIMILE COVER SHEET

DATE: March 16, 1998

FAX#: 1-970-482-9619

ATTN: Tom Gast

COMPANY: Tintic Utah Metals

DEPARTMENT:

NUMBER OF PAGES (INCLUDING THIS ONE) 19

From: Wayne Hedberg

If you do not receive all of the pages, or if they are illegible, please call (801)538-5340.

We are sending from a sharp facsimile machine. Our telecopier number is (801)359-3940.

MESSAGES:

original sent + faxed to Paul Spar.
Copy to you forthcoming in mail.

P.01

TRANSACTION REPORT

MAR-16-98 MON 03:46 PM

SEND(M)

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
MAR-16	03:32 PM	14354336674	13'20"	19	SEND	(M) OK	173	

TOTAL 13M 20S PAGES: 19

M/049/009

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt, Governor
Ted Stewart, Executive Director
James W. Carter, Division Director

1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

FACSIMILE COVER SHEET

DATE: March 16, 1998

NUMBER OF PAGES INCLUDING THIS COVER SHEET: 19

TO: Paul Span
Sinbad Utah Metals LLC
PO Box 451
Eureka Ut 84628

FAX NUMBER: 1-435-433-6674

FROM: Wayne Hedberg
Minerals Reclamation and Development Program

m/049/009

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

FACSIMILE COVER SHEET

DATE: March 16, 1998

NUMBER OF PAGES INCLUDING THIS COVER SHEET: 19

TO: Paul Spar
Tintic Utah Metals LLC
PO Box 451
Eureka Ut 84628

FAX NUMBER: 1-435-433-6674

FROM: Wayne Hedberg
Minerals Reclamation and Development Program

PHONE: (801) 538-5291
FAX: (801) 359-3940

SUBJECT: Initial Review of Revision - Burgin Mine
M/049/009

REMARKS: Original hard copy will be mailed after signature obtained

Should you encounter any problems with this copy, or do not receive all the pages, please call